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UDC 621·753·3 (First Reprint MARCH 1982) IS : 7859 - 1975

Indian Standard (Reaffirmed 2005)

GAUGE ALLOWANCES AND MANUFACTURING TOLERANCES FOR PLAIN GAUGES FOR INSIDE MEASUREMENTS FOR ISO FIT SIZES (NOMINAL SIZE UP TO 500 mm)

Engineering Metrology Sectional Committee, EDC 43; Gauges Subcommittee, EDC 43 : 3 [Ref: Doc: EDC 43(1820)]

1. Scope — Lays down the gauge allowances and manufacturing tolerances for plain cylindrical and flat plug gauges and spherical ended plain plug gauges for internal dimensions (holes) for ISO fit sizes up to 500 mm nominal size.

2. Symbols — Following symbols are used in this standard (*see also* Fig. 1):

Agn = Gauge allowance for GO member, new;
Ang = Gauge allowance for NO GO member;
Agw = Wear allowance for GO member, worn out;
y = Margin, outside the GO workpiece limit, of the wear limit of gauges for holes;
z = Distance between centre of tolerance zone of new GO gauges for holes and GO workpiece limit;

Note — For values of y and z *see* Table 2 of IS : 3455-1971 'Gauging practice for plain workpieces (*first revision*)'.

α = Safety zone provided for compensating measuring uncertainties of gauges for holes of nominal diameter above 180 mm;
H = Tolerance on cylindrical plug or cylindrical bar gauges;
H_s = Tolerance on spherical ended plug gauges;
N = Nominal size of the workpiece;
T = Tolerance of the workpiece;
G = Upper deviation of the workpiece;
K = Lower deviation of the workpiece.

3. Formulae for Determining Gauge Dimensions

Gauge Member	Formulae	Examples of Calculation		
		Cylindrical and Flat Plug Gauge		Spherical Ended Plug Gauge
		25 E9	100 H9	200 R7
GO member, new	$(N+Agn)\pm\frac{H}{2}$*	(25+0·049)±0·002 =25·049±0·002	(100+0·015)±0·003 =100·015±0·003	(200—0·099)±0·003 5 =199·901±0·003 5
NO GO member	$(N+Ang)\pm\frac{H}{2}$*	(25+0·092)±0·002 =25·092±0·002	(100+0·087)±0·003 =100·087±0·003	(200—0·063)±0·003 5 =199·937±0·003 5
GO member, worn out	$N+Agw$	25+0·040 =25·040	100+0 =100·000	200—0·109 =199·891

*$\frac{H}{2}$ is applicable for cylindrical and flat plug gauges. $\frac{H_s}{2}$ should be substituted for $\frac{H}{2}$ in the formula for spherical ended plug gauges.

4. Disposition of Tolerance for Cylindrical and Flat Plug Gauges and Spherical Ended Plug Gauges — Figure 1 shows the disposition of tolerance for cylindrical and flat plug gauges and spherical ended plug gauges with relation to the workpiece tolerance.

5. Calculated Values — Calculated values (in μm) of the gauge allowances for cylindrical and flat plug gauges and spherical ended plug gauges for a few selected ISO tolerance zones are given in Table 1 under *A*.

Adopted 10 October 1975

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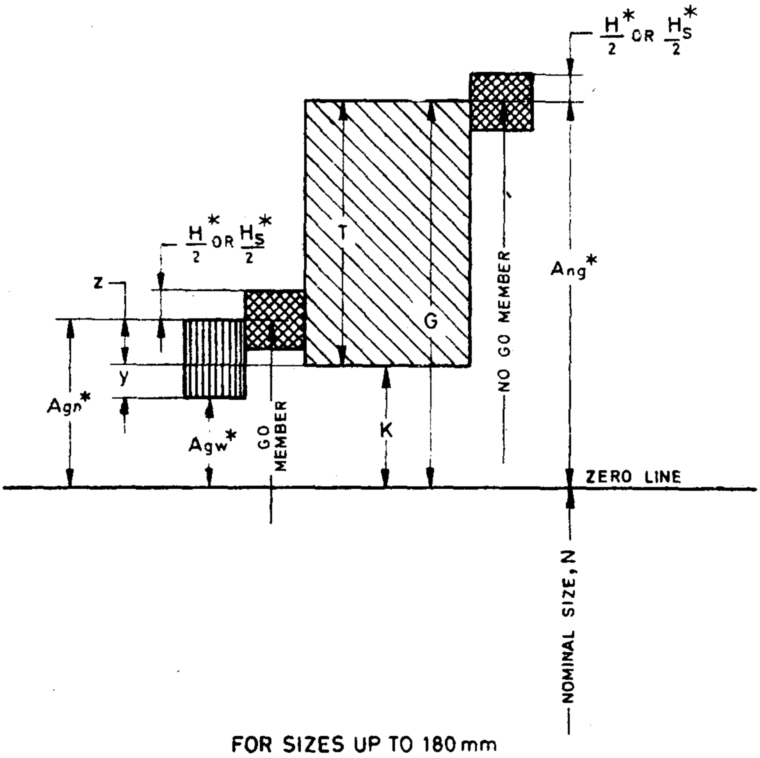
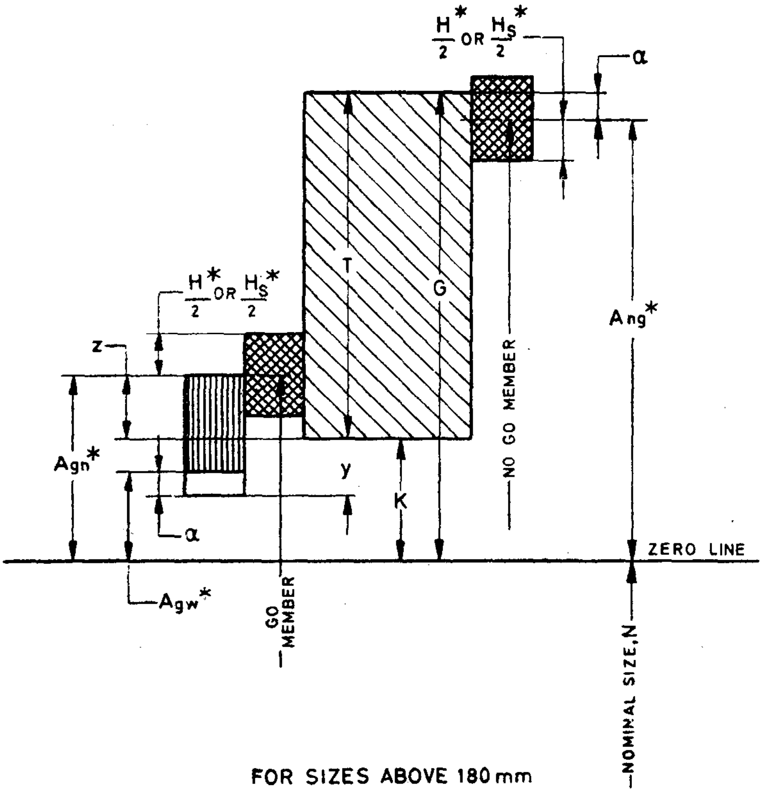


FOR SIZES UP TO 180 mm



FOR SIZES ABOVE 180 mm

* For values in μm, *see* Table 1.

FIG. 1 DISPOSITION OF TOLERANCES

TABLE 1 GAUGE ALLOWANCES AND MANUFACTURING TOLERANCES FOR INSIDE MEASUREMENTS

(*Clause* 5)

All values in μm.

NOMINAL SIZE mm		GAUGE	TOLERANCE CLASS								
			A11			B11			C11		
OVER	UP TO AND INCLUDING		A	$\pm\frac{H}{2}$	$\pm\frac{H_s}{2}$	A	$\pm\frac{H}{2}$	$\pm\frac{H_s}{2}$	A	$\pm\frac{H}{2}$	$\pm\frac{H_s}{2}$
—	3	Ang	+ 330	2	—	+ 200	2	—	+ 120	2	—
		Agn	+ 280	2	—	+ 150	2	—	+ 70	2	—
		Agw	+ 270	—	—	+ 140	—	—	+ 60	—	—
3	6	Ang	+ 345	2·5	—	+ 215	2·5	—	+ 145	2·5	—
		Agn	+ 282	2·5	—	+ 152	2·5	—	+ 82	2·5	—
		Agw	+ 270	—	—	+ 140	—	—	+ 70	—	—
6	10	Ang	+ 370	3	2	+ 240	3	2	+ 170	3	2
		Agn	+ 294	3	2	+ 164	3	2	+ 94	3	2
		Agw	+ 280	—	—	+ 150	—	—	+ 80	—	—
10	18	Ang	+ 400	4	2·5	+ 260	4	2·5	+ 205	4	2·5
		Agn	+ 306	4	2·5	+ 166	4	2·5	+ 111	4	2·5
		Agw	+ 290	—	—	+ 150	—	—	+ 95	—	—
18	30	Ang	+ 430	4·5	3	+ 290	4·5	3	+ 240	4·5	3
		Agn	+ 319	4·5	3	+ 179	4·5	3	+ 129	4·5	3
		Agw	+ 300	—	—	+ 160	—	—	+ 110	—	—
30	40	Ang	+ 470	5·5	3·5	+ 330	5·5	3·5	+ 280	5·5	3·5
		Agn	+ 332	5·5	3·5	+ 192	5·5	3·5	+ 142	5·5	3·5
		Agw	+ 310	—	—	+ 170	—	—	+ 120	—	—
40	50	Ang	+ 480	5·5	3·5	+ 340	5·5	3·5	+ 290	5·5	3·5
		Agn	+ 342	5·5	3·5	+ 202	5·5	3·5	+ 152	5·5	3·5
		Agw	+ 320	—	—	+ 180	—	—	+ 130	—	—
50	65	Ang	+ 530	6·5	4	+ 380	6·5	4	+ 330	6·5	4
		Agn	+ 365	6·5	4	+ 215	6·5	4	+ 165	6·5	4
		Agw	+ 340	—	—	+ 190	—	—	+ 140	—	—
65	80	Ang	+ 550	6·5	4	+ 390	6·5	4	+ 340	6·5	4
		Agn	+ 385	6·5	4	+ 225	6·5	4	+ 175	6·5	4
		Agw	+ 360	—	—	+ 200	—	—	+ 150	—	—
80	100	Ang	+ 600	7·5	5	+ 440	7·5	5	+ 390	7·5	5
		Agn	+ 408	7·5	5	+ 248	7·5	5	+ 198	7·5	5
		Agw	+ 380	—	—	+ 220	—	—	+ 170	—	—
100	120	Ang	+ 630	7·5	5	+ 460	7·5	5	+ 400	7·5	5
		Agn	+ 438	7·5	5	+ 268	7·5	5	+ 208	7·5	5
		Agw	+ 410	—	—	+ 240	—	—	+ 180	—	—
120	140	Ang	+ 710	9	6	+ 510	9	6	+ 450	9	6
		Agn	+ 492	9	6	+ 292	9	6	+ 232	9	6
		Agw	+ 460	—	—	+ 260	—	—	+ 200	—	—
140	160	Ang	+ 770	9	6	+ 530	9	6	+ 460	9	6
		Agn	+ 552	9	6	+ 312	9	6	+ 242	9	6
		Agw	+ 520	—	—	+ 280	—	—	+ 210	—	—
160	180	Ang	+ 830	9	6	+ 560	9	6	+ 480	9	6
		Agn	+ 612	9	6	+ 342	9	6	+ 262	9	6
		Agw	+ 580	—	—	+ 310	—	—	+ 230	—	—
180	200	Ang	+ 940	10	7	+ 620	10	7	+ 520	10	7
		Agn	+ 700	10	7	+ 380	10	7	+ 280	10	7
		Agw	+ 670	—	—	+ 350	—	—	+ 250	—	—
200	225	Ang	+ 1020	10	7	+ 660	10	7	+ 540	10	7
		Agn	+ 780	10	7	+ 420	10	7	+ 300	10	7
		Agw	+ 750	—	—	+ 390	—	—	+ 270	—	—
225	250	Ang	+ 1100	10	7	+ 700	10	7	+ 560	10	7
		Agn	+ 860	10	7	+ 460	10	7	+ 320	10	7
		Agw	+ 830	—	—	+ 430	—	—	+ 290	—	—
250	280	Ang	+ 1225	11·5	8	+ 785	11·5	8	+ 605	11·5	8
		Agn	+ 965	11·5	8	+ 525	11·5	8	+ 345	11·5	8
		Agw	+ 935	—	—	+ 495	—	—	+ 315	—	—
280	315	Ang	+ 1355	11·5	8	+ 845	11·5	8	+ 635	11·5	8
		Agn	+ 1095	11·5	8	+ 585	11·5	8	+ 375	11·5	8
		Agw	+ 1065	—	—	+ 555	—	—	+ 345	—	—
315	355	Ang	+ 1545	12·5	9	+ 945	12·5	9	+ 705	12·5	9
		Agn	+ 1250	12·5	9	+ 650	12·5	9	+ 410	12·5	9
		Agw	+ 1215	—	—	+ 615	—	—	+ 375	—	—
355	400	Ang	+ 1695	12·5	9	+ 1025	12·5	9	+ 745	12·5	9
		Agn	+ 1400	12·5	9	+ 730	12·5	9	+ 450	12·5	9
		Agw	+ 1365	—	—	+ 695	—	—	+ 415	—	—
400	450	Ang	+ 1860	13·5	10	+ 1140	13·5	10	+ 820	13·5	10
		Agn	+ 1555	13·5	10	+ 815	13·5	10	+ 495	13·5	10
		Agw	+ 1520	—	—	+ 780	—	—	+ 460	—	—
450	500	Ang	+ 2030	13·5	10	+ 1220	13·5	10	+ 860	13·5	10
		Agn	+ 1705	13·5	10	+ 895	13·5	10	+ 535	13·5	10
		Agw	+ 1670	—	—	+ 860	—	—	+ 500	—	—

(Continued)

TABLE 1 GAUGE ALLOWANCES AND MANUFACTURING TOLERANCES FOR INSIDE MEASUREMENTS — *Contd*

NOMINAL SIZE mm		GAUGE	TOLERANCE CLASS								
OVER	UP TO AND INCLUDING		D9			D10			D11		
			A	$\pm\frac{H}{2}$	$\pm\frac{H_s}{2}$	A	$\pm\frac{H}{2}$	$\pm\frac{H_s}{2}$	A	$\pm\frac{H}{2}$	$\pm\frac{H_s}{2}$
—	3	Ang	+ 45	1	—	+ 60	1	—	+ 80	2	—
		Agn	+ 25	1	—	+ 25	1	—	+ 30	2	—
		Agw	+ 20	—	—	+ 20	—	—	+ 20	—	—
3	6	Ang	+ 60	1·25	—	+ 78	1·25	—	+ 105	2·5	—
		Agn	+ 36	1·25	—	+ 36	1·25	—	+ 42	2·5	—
		Agw	+ 30	—	—	+ 30	—	—	+ 30	—	—
6	10	Ang	+ 76	1·25	0·75	+ 98	1·25	0·75	+ 130	3	2
		Agn	+ 47	1·25	0·75	+ 47	1·25	0·75	+ 54	3	2
		Agw	+ 40	—	—	+ 40	—	—	+ 40	—	—
10	18	Ang	+ 93	1·5	1	+ 120	1·5	1	+ 160	4	2·5
		Agn	+ 58	1·5	1	+ 58	1·5	1	+ 66	4	2·5
		Agw	+ 50	—	—	+ 50	—	—	+ 50	—	—
18	30	Ang	+ 117	2	1·25	+ 149	2	1·25	+ 195	4·5	3
		Agn	+ 74	2	1·25	+ 74	2	1·25	+ 84	4·5	3
		Agw	+ 65	—	—	+ 65	—	—	+ 65	—	—
30	50	Ang	+ 142	2	1·25	+ 180	2	1·25	+ 240	5·5	3·5
		Agn	+ 91	2	1·25	+ 91	2	1·25	+ 102	5·5	3·5
		Agw	+ 80	—	—	+ 80	—	—	+ 80	—	—
50	80	Ang	+ 174	2·5	1·5	+ 220	2·5	1·5	+ 290	6·5	4
		Agn	+ 113	2·5	1·5	+ 113	2·5	1·5	+ 125	6·5	4
		Agw	+ 100	—	—	+ 100	—	—	+ 100	—	—
80	120	Ang	+ 207	3	2	+ 260	3	2	+ 340	7·5	5
		Agn	+ 135	3	2	+ 135	3	2	+ 148	7·5	5
		Agw	+ 120	—	—	+ 120	—	—	+ 120	—	—
120	180	Ang	+ 245	4	2·5	+ 305	4	2·5	+ 395	9	6
		Agn	+ 163	4	2·5	+ 163	4	2·5	+ 177	9	6
		Agw	+ 145	—	—	+ 145	—	—	+ 145	—	—
180	250	Ang	+ 281	5	3·5	+ 348	5	3·5	+ 450	10	7
		Agn	+ 191	5	3·5	+ 194	5	3·5	+ 210	10	7
		Agw	+ 174	—	—	+ 177	—	—	+ 180	—	—
250	315	Ang	+ 314	6	4	+ 391	6	4	+ 495	11·5	8
		Agn	+ 214	6	4	+ 217	6	4	+ 235	11·5	8
		Agw	+ 196	—	—	+ 199	—	—	+ 205	—	—
315	400	Ang	+ 343	6·5	4·5	+ 429	6·5	4·5	+ 555	12·5	9
		Agn	+ 238	6·5	4·5	+ 242	6·5	4·5	+ 260	12·5	9
		Agw	+ 217	—	—	+ 221	—	—	+ 225	—	—
400	500	Ang	+ 376	7·5	5	+ 466	7·5	5	+ 610	13·5	10
		Agn	+ 262	7·5	5	+ 267	7·5	5	+ 285	13·5	10
		Agw	+ 239	—	—	+ 244	—	—	+ 250	—	—

(Continued)

TABLE 1 GAUGE ALLOWANCES AND MANUFACTURING TOLERANCES FOR INSIDE MEASUREMENTS — *Contd*

NOMINAL SIZE mm		GAUGE	TOLERANCE CLASS								
			E8			E9			E10		
OVER	UP TO AND INCLUDING		A	$\pm\frac{H}{2}$	$\pm\frac{H_s}{2}$	A	$\pm\frac{H}{2}$	$\pm\frac{H_s}{2}$	A	$\pm\frac{H}{2}$	$\pm\frac{H_s}{2}$
—	3	Ang	+ 28	1	—	+ 39	1	—	+ 54	1	—
		Agn	+ 16	1	—	+ 19	1	—	+ 19	1	—
		Agw	+ 11	—	—	+ 14	—	—	+ 14	—	—
3	6	Ang	+ 38	1·25	—	+ 50	1·25	—	+ 68	1·25	—
		Agn	+ 23	1·25	—	+ 26	1·25	—	+ 26	1·25	—
		Agw	+ 17	—	—	+ 20	—	—	+ 20	—	—
6	10	Ang	+ 47	1·25	0·75	+ 61	1·25	0·75	+ 83	1·25	0·75
		Agn	+ 28	1·25	0·75	+ 32	1·25	0·75	+ 32	1·25	0·75
		Agw	+ 22	—	—	+ 25	—	—	+ 25	—	—
10	18	Ang	+ 59	1·5	1	+ 75	1·5	1	+ 102	1·5	1
		Agn	+ 36	1·5	1	+ 40	1·5	1	+ 40	1·5	1
		Agw	+ 28	—	—	+ 32	—	—	+ 32	—	—
18	30	Ang	+ 73	2	1·25	+ 92	2	1·25	+ 124	2	1·25
		Agn	+ 45	2	1·25	+ 49	2	1·25	+ 49	2	1·25
		Agw	+ 36	—	—	+ 40	—	—	+ 40	—	—
30	50	Ang	+ 89	2	1·25	+ 112	2	1·25	+ 150	2	1·25
		Agn	+ 56	2	1·25	+ 61	2	1·25	+ 61	2	1·25
		Agw	+ 45	—	—	+ 50	—	—	+ 50	—	—
50	80	Ang	+ 106	2·5	1·5	+ 134	2·5	1·5	+ 180	2·5	1·5
		Agn	+ 67	2·5	1·5	+ 73	2·5	1·5	+ 73	2·5	1·5
		Agw	+ 55	—	—	+ 60	—	—	+ 60	—	—
80	120	Ang	+ 126	3	2	+ 159	3	2	+ 212	3	2
		Agn	+ 80	3	2	+ 87	3	2	+ 87	3	2
		Agw	+ 66	—	—	+ 72	—	—	+ 72	—	—
120	180	Ang	+ 148	4	2·5	+ 185	4	2·5	+ 245	4	2·5
		Agn	+ 94	4	2·5	+ 103	4	2·5	+ 103	4	2·5
		Agw	+ 79	—	—	+ 85	—	—	+ 85	—	—
180	250	Ang	+ 168	5	3·5	+ 211	5	3·5	+ 278	5	3·5
		Agn	+ 112	5	3·5	+ 121	5	3·5	+ 124	5	3·5
		Agw	+ 97	—	—	+ 104	—	—	+ 107	—	—
250	315	Ang	+ 185	6	4	+ 234	6	4	+ 311	6	4
		Agn	+ 124	6	4	+ 134	6	4	+ 137	6	4
		Agw	+ 107	—	—	+ 116	—	—	+ 119	—	—
315	400	Ang	+ 207	6·5	4·5	+ 258	6·5	4·5	+ 344	6·5	4·5
		Agn	+ 141	6·5	4·5	+ 153	6·5	4·5	+ 157	6·5	4·5
		Agw	+ 123	—	—	+ 132	—	—	+ 136	—	—
400	500	Ang	+ 223	7·5	5	+ 281	7·5	5	+ 371	7·5	5
		Agn	+ 153	7·5	5	+ 167	7·5	5	+ 172	7·5	5
		Agw	+ 133	—	—	+ 144	—	—	+ 149	—	—

(*Continued*)

TABLE 1 GAUGE ALLOWANCES AND MANUFACTURING TOLERANCES FOR INSIDE MEASUREMENTS — *Contd*

NOMINAL SIZE mm		GAUGE	TOLERANCE CLASS								
OVER	UP TO AND INCLUDING		F7			F8			F9		
			A	$\pm\frac{H}{2}$	$\pm\frac{H_s}{2}$	A	$\pm\frac{H}{2}$	$\pm\frac{H_s}{2}$	A	$\pm\frac{H}{2}$	$\pm\frac{H_s}{2}$
—	3	Ang	+ 16	1	—	+ 20	1	—	+ 31	1	—
		Agn	+ 7·5	1	—	+ 8	1	—	+ 11	1	—
		Agw	+ 4·5	—	—	+ 3	—	—	+ 6	—	—
3	6	Ang	+ 22	1·25	—	+ 28	1·25	—	+ 40	1·25	—
		Agn	+ 12	1·25	—	+ 13	1·25	—	+ 16	1·25	—
		Agw	+ 8·5	—	—	+ 7	—	—	+ 10	—	—
6	10	Ang	+ 28	1·25	0·75	+ 35	1·25	0·75	+ 49	1·25	0·75
		Agn	+ 15	1·25	0·75	+ 16	1·25	0·75	+ 20	1·25	0·75
		Agw	+ 11·5	—	—	+ 10	—	—	+ 13	—	—
10	18	Ang	+ 34	1·5	1	+ 43	1·5	1	+ 59	1·5	1
		Agn	+ 18·5	1·5	1	+ 20	1·5	1	+ 24	1·5	1
		Agw	+ 14	—	—	+ 12	—	—	+ 16	—	—
18	30	Ang	+ 41	2	1·25	+ 53	2	1·25	+ 72	2	1·25
		Agn	+ 23	2	1·25	+ 25	2	1·25	+ 29	2	1·25
		Agw	+ 17	—	—	+ 16	—	—	+ 20	—	—
30	50	Ang	+ 50	2	1·25	+ 64	2	1·25	+ 87	2	1·25
		Agn	+ 28·5	2	1·25	+ 31	2	1·25	+ 36	2	1·25
		Agw	+ 22	—	—	+ 20	—	—	+ 25	—	—
50	80	Ang	+ 60	2·5	1·5	+ 76	2·5	1·5	+104	2·5	1·25
		Agn	+ 34	2·5	1·5	+ 37	2·5	1·5	+ 43	2·5	1·25
		Agw	+ 27	—	—	+ 25	—	—	+ 30	—	—
80	120	Ang	+ 71	3	2	+ 90	3	2	+123	3	2
		Agn	+ 41	3	2	+ 44	3	2	+ 51	3	2
		Agw	+ 32	—	—	+ 30	—	—	+ 36	—	—
120	180	Ang	+ 83	4	2·5	+106	4	2·5	+143	4	2·5
		Agn	+ 49	4	2·5	+ 52	4	2·5	+ 61	4	2·5
		Agw	+ 39	—	—	+ 37	—	—	+ 43	—	—
180	250	Ang	+ 93	5	3·5	+ 118	5	3·5	+ 161	5	3·5
		Agn	+ 57	5	3·5	+ 62	5	3·5	+ 71	5	3·5
		Agw	+ 47	—	—	+ 47	—	—	+ 54	—	—
250	315	Ang	+104	6	4	+ 131	6	4	+180	6	4
		Agn	+ 64	6	4	+ 70	6	4	+ 80	6	4
		Agw	+ 53	—	—	+ 53	—	—	+ 62	—	—
315	400	Ang	+113	6·5	4·5	+144	6·5	4·5	+195	6·5	4·5
		Agn	+ 72	6·5	4·5	+ 78	6·5	4·5	+ 90	6·5	4·5
		Agw	+ 60	—	—	+ 60	—	—	+ 69	—	—
400	500	Ang	+124	7·5	5	+156	7·5	5	+214	7·5	5
		Agn	+ 79	7·5	5	+ 86	7·5	5	+100	7·5	5
		Agw	+ 66	—	—	+ 66	—	—	+ 77	—	—

(*Continued*)

TABLE 1 GAUGE ALLOWANCES AND MANUFACTURING TOLERANCES FOR INSIDE MEASUREMENTS — *Contd*

NOMINAL SIZE mm		GAUGE	TOLERANCE CLASS					
			G6			G7		
OVER	UP TO AND INCLUDING		A	$\pm\frac{H}{2}$	$\pm\frac{H_s}{2}$	A	$\pm\frac{H}{2}$	$\pm\frac{H_s}{2}$
—	3	Ang	+ 8	0·6	—	+ 12	1	—
		Agn	+ 3	0·6	—	+ 3·5	1	—
		Agw	+ 1	—	—	+ 0·5	—	—
3	6	Ang	+ 12	0·75	—	+ 16	1·25	—
		Agn	+ 5·5	0·75	—	+ 6	1·25	—
		Agw	+ 3	—	—	+ 2·5	—	—
6	10	Ang	+ 14	0·75	0·75	+ 20	1·25	0·75
		Agn	+ 6·5	0·75	0·75	+ 7	1·25	0·75
		Agw	+ 4	—	—	+ 3·5	—	—
10	18	Ang	+ 17	1	1	+ 24	1·5	1
		Agn	+ 8	1	1	+ 8·5	1·5	1
		Agw	+ 4·5	—	—	+ 4	—	—
18	30	Ang	+ 20	1·25	1·25	+ 28	2	1·25
		Agn	+ 9	1·25	1·25	+ 10	2	1·25
		Agw	+ 5·5	—	—	+ 4	—	—
30	50	Ang	+ 25	1·25	1·25	+ 34	2	1·25
		Agn	+ 11·5	1·25	1·25	+ 12·5	2	1·25
		Agw	+ 7	—	—	+ 6	—	—
50	80	Ang	+ 29	1·5	1·5	+ 40	2·5	1·5
		Agn	+ 12·5	1·5	1·5	+ 14	2·5	1·5
		Agw	+ 8	—	—	+ 7	—	—
80	120	Ang	+ 34	2	2	+ 47	3	2
		Agn	+ 15	2	2	+ 17	3	2
		Agw	+ 9	—	—	+ 8	—	—
120	180	Ang	+ 39	2·5	2·5	+ 54	4	2·5
		Agn	+ 18	2·5	2·5	+ 20	4	2·5
		Agw	+ 11	—	—	+ 10	—	—
180	250	Ang	+ 42	3·5	3·5	+ 58	5	3·5
		Agn	+ 20	3·5	3·5	+ 22	5	3·5
		Agw	+ 13	—	—	+ 12	—	—
250	315	Ang	+ 46	4	4	+ 65	6	4
		Agn	+ 23	4	4	+ 25	6	4
		Agw	+ 15	—	—	+ 14	—	—
315	400	Ang	+ 50	4·5	4·5	+ 69	6·5	4·5
		Agn	+ 25	4·5	4·5	+ 28	6·5	4·5
		Agw	+ 16	—	—	+ 16	—	—
400	500	Ang	+ 55	5	5	+ 76	7·5	5
		Agn	+ 28	5	5	+ 31	7·5	5
		Agw	+ 18	—	—	+ 18	—	—

(*Continued*)

TABLE 1 GAUGE ALLOWANCES AND MANUFACTURING TOLERANCES FOR INSIDE MEASUREMENTS — *Contd*

NOMINAL SIZE mm		GAUGE	TOLERANCE CLASS								
			H6			H7			H8		
OVER	UP TO AND INCLUDING		A	$\pm\frac{H}{2}$	$\pm\frac{H_s}{2}$	A	$\pm\frac{H}{2}$	$\pm\frac{H_s}{2}$	A	$\pm\frac{H}{2}$	$\pm\frac{H_s}{2}$
—	3	Ang	+ 6	0·6	—	+ 10	1	—	+ 14	1	—
		Agn	+ 1	0·6	—	+ 1·5	1	—	+ 2	1	—
		Agw	− 1	—	—	− 1·5	—	—	− 3	—	—
3	6	Ang	+ 8	0·75	—	+ 12	1·25	—	+ 18	1·25	—
		Agn	+ 1·5	0·75	—	+ 2	1·25	—	+ 3	1·25	—
		Agw	− 1	—	—	− 1·5	—	—	− 3	—	—
6	10	Ang	+ 9	0·75	0·75	+ 15	1·25	0·75	+ 22	1·25	0·75
		Agn	+ 1·5	0·75	0·75	+ 2	1·25	0·75	+ 3	1·25	0·75
		Agw	− 1	—	—	− 1·5	—	—	− 3	—	—
10	18	Ang	+ 11	1	1	+ 18	1·5	1	+ 27	1·5	1
		Agn	+ 2	1	1	+ 2·5	1·5	1	+ 4	1·5	1
		Agw	− 1·5	—	—	− 2	—	—	− 4	—	—
18	30	Ang	+ 13	1·25	1·25	+ 21	2	1·25	+ 33	2	1·25
		Agn	+ 2	1·25	1·25	+ 3	2	1·25	+ 5	2	1·25
		Agw	− 1·5	—	—	− 3	—	—	− 4	—	—
30	50	Ang	+ 16	1·25	1·25	+ 25	2	1·25	+ 39	2	1·25
		Agn	+ 2·5	1·25	1·25	+ 3·5	2	1·25	+ 6	2	1·25
		Agw	− 2	—	—	− 3	—	—	− 5	—	—
50	80	Ang	+ 19	1·5	1·5	+ 30	2·5	1·5	+ 46	2·5	1·5
		Agn	+ 2·5	1·5	1·5	+ 4	2·5	1·5	+ 7	2·5	1·5
		Agw	− 2	—	—	− 3	—	—	− 5	—	—
80	120	Ang	+ 22	2	2	+ 35	3	2	+ 54	3	2
		Agn	+ 3	2	2	+ 5	3	2	+ 8	3	2
		Agw	− 3	—	—	− 4	—	—	− 6	—	—
120	180	Ang	+ 25	2·5	2·5	+ 40	4	2·5	+ 63	4	2·5
		Agn	+ 4	2·5	2·5	+ 6	4	2·5	+ 9	4	2·5
		Agw	− 3	—	—	− 4	—	—	− 6	—	—
180	250	Ang	+ 27	3·5	3·5	+ 43	5	3·5	+ 68	5	3·5
		Agn	+ 5	3·5	3·5	+ 7	5	3·5	+ 12	5	3·5
		Agw	− 2	—	—	− 3	—	—	− 3	—	—
250	315	Ang	+ 29	4	4	+ 48	6	4	+ 75	6	4
		Agn	+ 6	4	4	+ 8	6	4	+ 14	6	4
		Agw	− 2	—	—	− 3	—	—	− 3	—	—
315	400	Ang	+ 32	4·5	4·5	+ 51	6·5	4·5	+ 82	6·5	4·5
		Agn	+ 7	4·5	4·5	+ 10	6·5	4·5	+ 16	6·5	4·5
		Agw	− 2	—	—	− 2	—	—	− 2	—	—
400	500	Ang	+ 35	5	5	+ 56	7·5	5	+ 88	7·5	5
		Agn	+ 8	5	5	+ 11	7·5	5	+ 18	7·5	5
		Agw	− 2	—	—	− 2	—	—	− 2	—	—

(*Continued*)

TABLE 1 GAUGE ALLOWANCES AND MANUFACTURING TOLERANCES FOR INSIDE MEASUREMENTS — *Contd*

NOMINAL SIZE mm		GAUGE	TOLERANCE CLASS								
OVER	UP TO AND INCLUDING		H9			H10			H11		
			A	$\pm\frac{H}{2}$	$\pm\frac{H_s}{2}$	A	$\pm\frac{H}{2}$	$\pm\frac{H_s}{2}$	A	$\pm\frac{H}{2}$	$\pm\frac{H_s}{2}$
—	3	Ang	+ 25	1	—	+ 40	1	—	+ 60	2	—
		Agn	+ 5	1	—	+ 5	1	—	+ 10	2	—
		Agw	0	—	—	0	—	—	0	—	—
3	6	Ang	+ 30	1·25	—	+ 48	1·25	—	+ 75	2·5	—
		Agn	+ 6	1·25	—	+ 6	1·25	—	+ 12	2·5	—
		Agw	0	—	—	0	—	—	0	—	—
6	10	Ang	+ 36	1·25	0·75	+ 58	1·25	0·75	+ 90	3	2
		Agn	+ 7	1·25	0·75	+ 7	1·55	0·75	+ 14	3	2
		Agw	0	—	—	0	—	—	0	—	—
10	18	Ang	+ 43	1·5	1	+ 70	1·5	1	+ 110	4	2·5
		Agn	+ 8	1·5	1	+ 8	1·5	1	+ 16	4	2·5
		Agw	0	—	—	0	—	—	0	—	—
18	30	Ang	+ 52	2	1·25	+ 64	2	1·25	+ 130	4·5	3
		Agn	+ 9	2	1·25	+ 9	2	1·25	+ 19	4·5	3
		Agw	0	—	—	0	—	—	0	—	—
30	50	Ang	+ 62	2	1·25	+ 100	2	1·25	+ 160	5·5	3·5
		Agn	+ 11	2	1·25	+ 11	2	1·25	+ 22	5·5	3·5
		Agw	0	—	—	0	—	—	0	—	—
50	80	Ang	+ 74	2·5	1·5	+ 120	2·5	1·5	+ 190	6·5	4
		Agn	+ 13	2·5	1·5	+ 13	2·5	1·5	+ 25	6·5	4
		Agw	0	—	—	0	—	—	0	—	—
80	120	Ang	+ 87	3	2	+ 140	3	2	+ 220	7·5	5
		Agn	+ 15	3	2	+ 15	3	2	+ 28	7·5	5
		Agw	0	—	—	0	—	—	0	—	—
120	180	Ang	+ 100	4	2·5	+ 160	4	2·5	+ 250	9	6
		Agn	+ 18	4	2·5	+ 18	4	2·5	+ 32	9	6
		Agw	0	—	—	0	—	—	0	—	—
180	250	Ang	+ 111	5	3·5	+ 178	5	3·5	+ 280	10	7
		Agn	+ 21	5	3·5	+ 24	5	3·5	+ 40	10	7
		Agw	+ 4	—	—	+ 7	—	—	+ 10	—	—
250	315	Ang	+ 124	6	4	+ 201	6	4	+ 305	11·5	8
		Agn	+ 24	6	4	+ 27	6	4	+ 45	11·5	8
		Agw	+ 6	—	—	+ 9	—	—	+ 15	—	—
315	400	Ang	+ 133	6·5	4·5	+ 219	6·5	4·5	+ 345	12·5	9
		Agn	+ 28	6·5	4·5	+ 32	6·5	4·5	+ 50	12·5	9
		Agw	+ 7	—	—	+ 11	—	—	+ 15	—	—
400	500	Ang	+ 146	7·5	5	+ 236	7·5	5	+ 380	13·5	10
		Agn	+ 32	7·5	5	+ 37	7·5	5	+ 55	13·5	10
		Agw	+ 9	—	—	+ 14	—	—	+ 20	—	—

(*Continued*)

TABLE 1 GAUGE ALLOWANCES AND MANUFACTURING TOLERANCES FOR INSIDE MEASUREMENTS — *Contd*

NOMINAL SIZE mm		GAUGE	TOLERANCE CLASS								
			Js6			Js7			Js8		
OVER	UP TO AND INCLUDING		A	$\pm\frac{H}{2}$	$\pm\frac{Hs}{2}$	A	$\pm\frac{H}{2}$	$\pm\frac{Hs}{2}$	A	$\pm\frac{H}{2}$	$\pm\frac{Hs}{2}$
—	3	Ang	+ 3	0·6	—	+ 5	1	—	+ 7	1	—
		Agn	− 2	0·6	—	− 3·5	1	—	− 5	1	—
		Agw	− 4	—	—	− 6·5	—	—	− 10	—	—
3	6	Ang	+ 4	0·75	—	+ 6	1·25	—	+ 9	1·25	—
		Agn	− 2·5	0·75	—	− 4	1·25	—	− 6	1·25	—
		Agw	− 5	—	—	− 7·5		—	− 12	—	—
6	10	Ang	+ 4·5	0·75	0·75	+ 7·5	1·25	0·75	+ 11	1·25	0·75
		Agn	− 3	0·75	0·75	− 5·5	1·25	0·75	− 8	1·25	0·75
		Agw	− 5·5	—	—	− 9	—	—	− 14	—	—
10	18	Ang	+ 5·5	1	1	+ 9	1·5	1	+ 13·5	1·5	1
		Agn	− 3·5	1	1	− 6·5	1·5	1	− 9·5	1·5	1
		Agw	− 7	—	—	− 11	—	—	− 17·5	—	—
18	30	Ang	+ 6·5	1·25	1·25	+ 10·5	2	1·25	+ 16·5	2	1·25
		Agn	− 4·5	1·25	1·25	− 7·5	2	1·25	− 11·5	2	1·25
		Agw	− 8	—	—	− 13·5	—	—	− 20·5	—	—
30	50	Ang	+ 8	1·25	1·25	+ 12·5	2	1·25	+ 19·5	2	1·25
		Agn	− 5·5	1·25	1·25	− 9	2	1·25	− 13·5	2	1·25
		Agw	− 10	—	—	− 15·5	—	—	− 24·5	—	—
50	80	Ang	+ 9·5	1·5	1·5	+ 15	2·5	1·5	+ 23	2·5	1·5
		Agn	− 7	1·5	1·5	− 11	2·5	1·5	− 16	2·5	1·5
		Agw	− 11·5	—	—	− 18	—	—	− 28	—	—
80	120	Ang	+ 11	2	2	+ 17·5	3	2	+ 27	3	2
		Agn	− 8	2	2	− 12·5	3	2	− 19	3	2
		Agw	− 14	—	—	− 21·5	—	—	− 33	—	—
120	180	Ang	+ 12·5	2·5	2·5	+ 20	4	2·5	+ 31·5	4	2·5
		Agn	− 8·5	2·5	2·5	− 14	4	2·5	− 22·5	4	2·5
		Agw	− 15·5	—	—	− 24	—	—	− 37·5	—	—
180	250	Ang	+ 12·5	3·5	3·5	+ 20	5	3·5	+ 32	5	3·5
		Agn	− 9·5	3·5	3·5	− 16	5	3·5	− 24	5	3·5
		Agw	− 16·5	—	—	− 26	—	—	− 39	—	—
250	315	Ang	+ 13	4	4	+ 22	6	4	+ 34·5	6	4
		Agn	− 10	4	4	− 18	6	4	− 26·5	6	4
		Agw	− 18	—	—	− 29	—	—	− 43·5	—	—
315	400	Ang	+ 14	4·5	4·5	+ 22·5	6·5	4·5	+ 37·5	6·5	4·5
		Agn	− 11	4·5	4·5	− 18·5	6·5	4·5	− 28·5	6·5	4·5
		Agw	− 20	—	—	− 30·5	—	—	− 46·5	—	—
400	500	Ang	+ 15	5	5	+ 24·5	7·5	5	+ 39·5	7·5	5
		Agn	− 12	5	5	− 20·5	7·5	5	− 30·5	7·5	5
		Agw	− 22	—	—	− 33·5	—	—	− 50·5	—	—

(*Continued*)

TABLE 1 GAUGE ALLOWANCES AND MANUFACTURING TOLERANCES FOR INSIDE MEASUREMENTS — *Contd*

NOMINAL SIZE mm		GAUGE	TOLERANCE CLASS								
			K6			K7			K8		
OVER	UP TO AND INCLUDING		A	$\pm\frac{H}{2}$	$\pm\frac{Hs}{2}$	A	$\pm\frac{H}{2}$	$\pm\frac{Hs}{2}$	A	$\pm\frac{H}{2}$	$\pm\frac{Hs}{2}$
—	3	Ang	0	0·6	—	0	1	–	0	1	-
		Agn	– 5	0·6	–	– 8·5	1	–	– 12	1	-
		Agw	– 7	—	–	– 11·5	–	–	– 17	–	–
3	6	Ang	+ 2	0·75	–	+ 3	1·25	–	+ 5	1·25	-
		Agn	– 4·5	0·75	–	– 7	1·25	–	– 10	1·25	-
		Agw	– 7	—	–	– 10·5	–	–	– 16	—	-
6	10	Ang	+ 2	0·75	0·75	+ 5	1·25	0·75	+ 6	1·25	0·75
		Agn	– 5·5	0·75	0·75	– 8	1·25	0·75	– 13	1·25	0·75
		Agw	– 8	–	–	– 11·5	–	–	– 19	–	–
10	18	Ang	+ 2	1	1	+ 6	1·5	1	+ 8	1·5	1
		Agn	– 7	1	1	– 9·5	1·5	1	– 15	1·5	1
		Agw	– 10·5	–	–	– 14	–	–	– 23	–	–
18	30	Ang	+ 2	1·25	1·25	+ 6	2	1·25	+ 10	2	1·25
		Agn	– 9	1·25	1·25	– 12	2	1·25	– 18	2	1·25
		Agw	– 12·5	–	–	– 18	–	–	– 27	–	–
30	50	Ang	+ 3	1·25	1·25	+ 7	2	1·25	+ 12	2	1·25
		Agn	– 10·5	1·25	1·25	– 14·5	2	1·25	– 21	2	1·25
		Agw	– 15	–	–	– 21	–	–	– 32	–	–
50	80	Ang	+ 4	1·5	1·5	+ 9	2·5	1·5	+ 14	2·5	1·5
		Agn	– 12·5	1·5	1·5	– 17	2·5	1·5	– 25	2·5	1·5
		Agw	– 17	–	–	– 24	–	–	– 37	–	–
80	120	Ang	+ 4	2	2	+ 10	3	2	+ 16	3	2
		Agn	– 15	2	2	– 20	3	2	– 30	3	2
		Agw	– 21	–	–	– 29	–	–	– 44	–	–
120	180	Ang	+ 4	2·5	2·5	+ 12	4	2·5	+ 20	4	2·5
		Agn	– 17	2·5	2·5	– 22	4	2·5	– 34	4	2·5
		Agw	– 24	–	–	– 32	–	–	– 49	–	–
180	250	Ang	+ 3	3·5	3·5	+ 10	5	3·5	+ 18	5	3·5
		Agn	– 19	3·5	3·5	– 26	5	3·5	– 38	5	3·5
		Agw	– 26	–	–	– 36	–	–	– 53	–	–
250	315	Ang	+ 2	4	4	+ 12	6	4	+ 19	6	4
		Agn	– 21	4	4	– 28	6	4	– 42	6	4
		Agw	– 29	–	–	– 39	–	–	– 59	–	–
315	400	Ang	+ 3	4·5	4·5	+ 11	6·5	4·5	+ 21	6·5	4·5
		Agn	– 22	4·5	4·5	– 30	6·5	4·5	– 45	6·5	4·5
		Agw	– 31	–	–	– 42	–	–	– 63	–	–
400	500	Ang	+ 3	5	5	+ 11	7·5	5	+ 20	7·5	5
		Agn	– 24	5	5	– 34	7·5	5	– 50	7·5	5
		Agw	– 34	–	–	– 47	–	–	– 70	–	–

(Continued)

TABLE 1 GAUGE ALLOWANCES AND MANUFACTURING TOLERANCES FOR INSIDE MEASUREMENTS — *Contd*

NOMINAL SIZE mm		GAUGE	TOLERANCE CLASS								
			M6			M7			M8		
OVER	UP TO AND INCLUDING		A	$\pm\frac{H}{2}$	$\pm\frac{H_s}{2}$	A	$\pm\frac{H}{2}$	$\pm\frac{H_s}{2}$	A	$\pm\frac{H}{2}$	$\pm\frac{H_s}{2}$
—	3	Ang	−2	0·6	—	−2	1	—	—	1	—
		Agn	−7	0·6	—	−10·5	1	—	—	1	—
		Agw	−9	—	—	−13·5	—	—	—	—	—
3	6	Ang	−1	0·75	—	0	1·25	—	+2	1·25	—
		Agn	−7·5	0·75	—	−10	1·25	—	−13	1·25	—
		Agw	−10	—	—	−13·5		—	−19	—	—
6	10	Ang	−3	0·75	0·75	0	1·25	0·75	+1	1·25	0·75
		Agn	−10·5	0·75	0·75	−13	1·25	0·75	−18	1·25	0·75
		Agw	−13	—	—	−16·5	—	—	−24	—	—
10	18	Ang	−4	1	1	0	1·5	1	+2	1·5	1
		Agn	−13	1	1	−15·5	1·5	1	−21	1·5	1
		Agw	−16·5	—	—	−20	—	—	−29	—	—
18	30	Ang	−4	1·25	1·25	0	2	1·25	+4	2	1·25
		Agn	−15	1·25	1·25	−18	2	1·25	−24	2	1·25
		Agw	−18·5	—	—	−24	—	—	−33	—	—
30	50	Ang	−4	1·25	1·25	0	2	1·25	+5	2	1·25
		Agn	−17·5	1·25	1·25	−21·5	2	1·25	−28	2	1·25
		Agw	−22	—	—	−28	—	—	−39	—	—
50	80	Ang	−5	1·5	1·5	0	2·5	1·5	+5	2·5	1·5
		Agn	−21·5	1·5	1·5	−26	2·5	1·5	−34	2·5	1·5
		Agw	−26	—	—	−33	—	—	−46	—	—
80	120	Ang	−6	2	2	0	3	2	+6	3	2
		Agn	−25	2	2	−30	3	2	−40	3	2
		Agw	−31	—	—	−39	—	—	−54	—	—
120	180	Ang	−8	2·5	2·5	0	4	2·5	+8	4	2·5
		Agn	−29	2·5	2·5	−34	4	2·5	−46	4	2·5
		Agw	−36	—	—	−44	—	—	−61	—	—
180	250	Ang	−10	3·5	3·5	−3	5	3·5	+5	5	3·5
		Agn	−32	3·5	3·5	−39	5	3·5	−51	5	3·5
		Agw	−39	—	—	−49	—	—	−66	—	—
250	315	Ang	−12	4	4	−4	6	4	+3	6	4
		Agn	−35	4	4	−44	6	4	−58	6	4
		Agw	−43	—	—	−55	—	—	−75	—	—
315	400	Ang	−14	4·5	4·5	−6	6·5	4·5	+4	6·5	4·5
		Agn	−39	4·5	4·5	−47	6·5	4·5	−62	6·5	4·5
		Agw	−48	—	—	−59	—	—	−80	—	—
400	500	Ang	−15	5	5	−7	7·5	5	+2	7·5	5
		Agn	−42	5	5	−52	7·5	5	−68	7·5	5
		Agw	−52	—	—	−65	—	—	−88	—	—

(*Continued*)

TABLE 1 GAUGE ALLOWANCES AND MANUFACTURING TOLERANCES FOR INSIDE MEASUREMENTS — *Contd*

NOMINAL SIZE mm		GAUGE	TOLERANCE CLASS								
			N6			N7			N8		
OVER	UP TO AND INCLUDING		A	$\pm\frac{H}{2}$	$\pm\frac{H_s}{2}$	A	$\pm\frac{H}{2}$	$\pm\frac{H_s}{2}$	A	$\pm\frac{H}{2}$	$\pm\frac{H_s}{2}$
—	3	Ang Agn Agw	− 4 − 9 − 11	0·6 0·6 —	— — —	− 4 − 12·5 − 15·5	1 1 —	— — —	− 4 − 16 − 21	1 1 —	— — —
3	6	Ang Agn Agw	− 5 − 11·5 − 14	0·75 0·75 —	— — —	− 4 − 14 − 17·5	1·25 1·25 —	— — —	− 2 − 17 − 23	1·25 1·25 —	— — —
6	10	Ang Agn Agw	− 7 − 14·5 − 17	0·75 0·75 —	0·75 0·75 —	− 4 − 17 − 20·5	1·25 1·25 —	0·75 0·75	− 3 − 22 − 28	1·25 1·25 —	0·75 0·75 —
10	18	Ang Agn Agw	− 9 − 18 − 21·5	1 1 —	1 1 —	− 5 − 20·5 − 25	1·5 1·5 —	1 1 —	− 3 − 26 − 34	1·5 1·5 —	1 1 —
18	30	Ang Agn Agw	− 11 − 22 − 25·5	1·25 1·25 —	1·25 1·25 —	− 7 − 25 − 31	2 2 —	1·25 1·25 —	− 3 − 31 − 40	2 2 —	1·25 1·25 —
30	50	Ang Agn Agw	− 12 − 25·5 − 30	1·25 1·25 —	1·25 1·25 —	− 8 − 29·5 − 36	2 2 —	1·25 1·25 —	− 3 − 36 − 47	2 2 —	1·25 1·25 —
50	80	Ang Agn Agw	− 14 − 30·5 − 35	1·5 1·5 —	1·5 1·5 —	− 9 − 35 − 42	2·5 2·5 —	1·5 1·5 —	− 4 − 43 − 55	2·5 2·5 —	1·5 1·5 —
80	120	Ang Agn Agw	− 16 − 35 − 41	2 2 —	2 2 —	− 10 − 40 − 49	3 3 —	2 2 —	− 4 − 50 − 64	3 3 —	2 2 —
120	180	Ang Agn Agw	− 20 − 41 − 48	2·5 2·5 —	2·5 2·5 —	− 12 − 46 − 56	4 4 —	2·5 2·5 —	− 4 − 58 − 73	4 4 —	2·5 2·5 —
180	250	Ang Agn Agw	− 24 − 46 − 53	3·5 3·5 —	3·5 3·5 —	− 17 − 53 − 63	5 5 —	3·5 3·5 —	− 9 − 65 − 80	5 5 —	3·5 3·5 —
250	315	Ang Agn Agw	− 28 − 51 − 59	4 4 —	4 4 —	− 18 − 58 − 69	6 6 —	4 4 —	− 11 − 72 − 89	6 6 —	4 4 —
315	400	Ang Agn Agw	− 30 − 55 − 64	4·5 4·5 —	4·5 4·5 —	− 22 − 63 − 75	6·5 6·5 —	4·5 4·5 —	− 12 − 78 − 96	6·5 6·5 —	4·5 4·5 —
400	500	Ang Agn Agw	− 32 − 59 − 69	5 5 —	5 5 —	− 24 − 69 − 82	7·5 7·5 —	5 5 —	− 15 − 85 − 105	7·5 7·5 —	5 5 —

(*Continued*)

TABLE 1 GAUGE ALLOWANCES AND MANUFACTURING TOLERANCES FOR INSIDE MEASUREMENTS — *Contd*

NOMINAL SIZE mm		GAUGE	TOLERANCE CLASS								
			P6			P7			P8		
OVER	UP TO AND INCLUDING		A	$\pm\frac{H}{2}$	$\pm\frac{H_s}{2}$	A	$\pm\frac{H}{2}$	$\pm\frac{H_s}{2}$	A	$\pm\frac{H}{2}$	$\pm\frac{H_s}{2}$
—	3	Ang Agn Agw	− 6 −11 −13	0·6 0·6 –	– – –	− 6 − 14·5 − 17·5	1 1 –	– – –	− 6 − 18 − 23	1 1 –	– – –
3	6	Ang Agn Agw	− 9 −15·5 −18	0·75 0·75 –	– – –	− 8 − 18 − 21·5	1·25 1·25 –	– – –	− 12 − 27 − 33	1·25 1·25 –	– – –
6	10	Ang Agn Agw	−12 −19·5 −22	0·75 0·75 –	0·75 0·75 –	− 9 − 22 − 25·5	1·25 1·25 –	0·75 0·75 –	− 15 − 34 − 40	1·25 1·25 –	0·75 0·75 –
10	18	Ang Agn Agw	−15 −24 −27·5	1 1 –	1 1 –	− 11 − 26·5 − 31	1·5 1·5 –	1 1 –	− 18 − 41 − 49	1·5 1·5 –	1 1 –
18	30	Ang Agn Agw	−18 −29 −32·5	1·25 1·25 –	1·25 1·25 –	− 14 − 32 − 38	2 2 –	1·25 1·25 –	− 22 − 50 − 59	2 2 –	1·25 1·25 –
30	50	Ang Agn Agw	− 21 −34·5 −39	1·25 1·25 –	1·25 1·25 –	− 17 − 38·5 − 45	2 2 –	1·25 1·25 –	− 26 − 59 − 70	2 2 –	1·25 1·25 –
50	80	Ang Agn Agw	−26 −42·5 −47	1·5 1·5 –	1·5 1·5 –	− 21 − 47 − 54	2·5 2·5 –	1·5 1·5 –	− 32 − 71 − 83	2·5 2·5 –	1·5 1·5 –
80	120	Ang Agn Agw	−30 −49 −55	2 2 –	2 2 –	− 24 − 54 − 63	3 3 –	2 2 –	− 37 − 83 − 97	3 3 –	2 2 –
120	180	Ang Agn Agw	−36 −57 −64	2·5 2·5 –	2·5 2·5 –	− 28 − 62 − 72	4 4 –	2·5 2·5 –	− 43 − 97 − 112	4 4 –	2·5 2·5 –
180	250	Ang Agn Agw	−43 −65 −72	3·5 3·5 –	3·5 3·5 –	− 36 − 72 − 82	5 5 –	3·5 3·5 –	− 54 −110 −125	5 5 –	3·5 3·5 –
250	315	Ang Agn Agw	−50 −73 − 81	4 4 –	4 4 –	− 40 − 80 − 91	6 6 –	4 4 –	− 62 −123 −140	6 6 –	4 4 –
315	400	Ang Agn Agw	−55 −80 −89	4·5 4·5 –	4·5 4·5 –	− 47 − 88 −100	6·5 6·5 –	4·5 4·5 –	− 69 −135 −153	6·5 6·5 –	4·5 4·5 –
400	500	Ang Agn Agw	−60 −87 −97	5 5 –	5 5 –	− 52 − 97 − 110	7·5 7·5 –	5 5 –	− 77 −147 −167	7·5 7·5 –	5 5 –

(Continued)

TABLE 1 GAUGE ALLOWANCES AND MANUFACTURING TOLERANCES FOR INSIDE MEASUREMENTS — *Contd*

NOMINAL SIZE mm		GAUGE	TOLERANCE CLASS								
			R6			R7			R8		
OVER	UP TO AND INCLUDING		A	$\pm\frac{H}{2}$	$\pm\frac{H_s}{2}$	A	$\pm\frac{H}{2}$	$\pm\frac{H_s}{2}$	A	$\pm\frac{H}{2}$	$\pm\frac{H_s}{2}$
—	3	A_{ng}	−10	0·6	—	−10	1	—	−10	1	—
		A_{gn}	−15	0·6	—	−18·5	1	—	−22	1	—
		A_{gw}	−17	—	—	−21·5	—	—	−27	—	—
3	6	A_{ng}	−12	0·75	—	−11	1·25	—	−15	1·25	—
		A_{gn}	−18·5	0·75	—	−21	1·25	—	−30	1·25	—
		A_{gw}	−21	—	—	−24·5	—	—	−36	—	—
6	10	A_{ng}	−16	0·75	0·75	−13	1·25	0·75	−19	1·25	0·75
		A_{gn}	−23·5	0·75	0·75	−26	1·25	0·75	−38	1·25	0·75
		A_{gw}	−26	—	—	−29·5	—	—	−44	—	—
10	18	A_{ng}	−20	1	1	−16	1·5	1	−23	1·5	1
		A_{gn}	−29	1	1	−31·5	1·5	1	−46	1·5	1
		A_{gw}	−32·5	—	—	−36	—	—	−54	—	—
18	30	A_{ng}	−24	1·25	1·25	−20	2	1·25	−28	2	1·25
		A_{gn}	−35	1·25	1·25	−38	2	1·25	−56	2	1·25
		A_{gw}	−38·5	—		−44	—	—	−65	—	—
30	50	A_{ng}	−29	1·25	1·25	−25	2	1·25	−34	2	1·25
		A_{gn}	−42·5	1·25	1·25	−46·5	2	1·25	−67	2	1·25
		A_{gw}	−47	—	—	−53	—	—	−78	—	—
50	65	A_{ng}	−35	1·5	1·5	−30	2·5	1·5	−41	2·5	1·5
		A_{gn}	−51·5	1·5	1·5	−56	2·5	1·5	−80	2·5	1·5
		A_{gw}	−56	—	—	−63	—	—	−92	—	—
65	80	A_{ng}	−37	1·5	1·5	−32	2·5	1·5	−43	2·5	1·5
		A_{gn}	−53·5	1·5	1·5	−58	2·5	1·5	−82	2·5	1·5
		A_{gw}	−58	—	—	−65	—	—	−94	—	—
80	100	A_{ng}	−44	2	2	−38	3	2	−51	3	2
		A_{gn}	−63	2	2	−68	3	2	−97	3	2
		A_{gw}	−69	—	—	−77	—	—	−111	—	—
100	120	A_{ng}	−47	2	2	−41	3	2	−54	3	2
		A_{gn}	−66	2	2	−71	3	2	−100	3	2
		A_{gw}	−72	—	—	−80	—	—	−114	—	—
120	140	A_{ng}	−56	2·5	2·5	−48	4	2·5	−63	4	2·5
		A_{gn}	−77	2·5	2·5	−82	4	2·5	−117	4	2·5
		A_{gw}	−84	—	—	−92	—	—	−132	—	—
140	160	A_{ng}	−58	2·5	2·5	−50	4	2·5	−65	4	2·5
		A_{gn}	−79	2·5	2·5	−84	4	2·5	−119	4	2·5
		A_{gw}	−86	—	—	−94	—	—	−134	—	—
160	180	A_{ng}	−61	2·5	2·5	−53	4	2·5	−68	4	2·5
		A_{gn}	−82	2·5	2·5	−87	4	2·5	−122	4	2·5
		A_{gw}	−89	—	—	−97	—	—	−137	—	—
180	200	A_{ng}	−70	3·5	3·5	−63	5	3·5	−81	5	3·5
		A_{gn}	−92	3·5	3·5	−99	5	3·5	−137	5	3·5
		A_{gw}	−99	—	—	−109	—	—	−152	—	—
200	225	A_{ng}	−73	3·5	3·5	−66	5	3·5	−84	5	3·5
		A_{gn}	−95	3·5	3·5	−102	5	3·5	−140	5	3·5
		A_{gw}	−102	—	—	−112	—	—	−155	—	—
225	250	A_{ng}	−77	3·5	3·5	−70	5	3·5	−88	5	3·5
		A_{gn}	−99	3·5	3·5	−106	5	3·5	−144	5	3·5
		A_{gw}	−106	—	—	−116	—	—	−159	—	—
250	280	A_{ng}	−88	4	4	−78	6	4	−100	6	4
		A_{gn}	−111	4	4	−118	6	4	−161	6	4
		A_{gw}	−119	—	—	−129	—	—	−178	—	—
280	315	A_{ng}	−92	4	4	−82	6	4	−104	6	4
		A_{gn}	−115	4	4	−122	6	4	−165	6	4
		A_{gw}	−123	—	—	−133	—	—	−182	—	—
315	355	A_{ng}	−101	4·5	4·5	−93	6·5	4·5	−115	6·5	4·5
		A_{gn}	−126	4·5	4·5	−134	6·5	4·5	−181	6·5	4·5
		A_{gw}	−135	—	—	−146	—	—	−199	—	—
355	400	A_{ng}	−107	4·5	4·5	−99	6·5	4·5	−121	6·5	4·5
		A_{gn}	−132	4·5	4·5	−140	6·5	4·5	−187	6·5	4·5
		A_{gw}	−141	—	—	−152	—	—	−205	—	—
400	450	A_{ng}	−118	5	5	−110	7·5	5	−135	7·5	5
		A_{gn}	−145	5	5	−155	7·5	5	−205	7·5	5
		A_{gw}	−155	—	—	−168	—	—	−225	—	—
450	500	A_{ng}	−124	5	5	−116	7·5	5	−141	7·5	5
		A_{gn}	−151	5	5	−161	7·5	5	−211	7·5	5
		A_{gw}	−161	—	—	−174	—	—	−231	—	—

(*Continued*)

TABLE 1 GAUGE ALLOWANCES AND MANUFACTURING TOLERANCES FOR INSIDE MEASUREMENTS — *Contd*

NOMINAL SIZE mm		GAUGE	TOLERANCE CLASS					
			S6			S7		
OVER	UP TO AND INCLUDING		A	$\pm\frac{H}{2}$	$\pm\frac{H_s}{2}$	A	$\pm\frac{H}{2}$	$\pm\frac{H_s}{2}$
—	3	Ang	− 14	0·6	—	− 14	1	—
		Agn	− 19	0·6	—	− 22·5	1	—
		Agw	− 21	—	—	− 25·5	—	—
3	6	Ang	− 16	0·75	—	− 15	1·25	—
		Agn	− 22·5	0·75	—	− 25	1·25	—
		Agw	− 25	—	—	− 28·5	—	—
6	10	Ang	− 20	0·75	0·75	− 17	1·25	0·75
		Agn	− 27·5	0·75	0·75	− 30	1·25	0·75
		Agw	− 30	—	—	− 33·5	—	—
10	18	Ang	− 25	1	1	− 21	1·5	1
		Agn	− 34	1	1	− 36·5	1·5	1
		Agw	− 37·5	—	—	− 41	—	—
18	30	Ang	− 31	1·25	1·25	− 27	2	1·25
		Agn	− 42	1·25	1·25	− 45	2	1·25
		Agw	− 45·5	—	—	− 51	—	—
30	50	Ang	− 38	1·25	1·25	− 34	2	1·25
		Agn	− 51·5	1·25	1·25	− 55·5	2	1·25
		Agw	− 56	—	—	− 62	—	—
50	65	Ang	− 47	1·5	1·5	− 42	2·5	1·5
		Agn	− 63·5	1·5	1·5	− 68	2·5	1·5
		Agw	− 68	—	—	− 75	—	—
65	80	Ang	− 53	1·5	1·5	− 48	2·5	1·5
		Agn	− 69·5	1·5	1·5	− 74	2·5	1·5
		Agw	− 74	—	—	− 81	—	—
80	100	Ang	− 64	2	2	− 58	3	2
		Agn	− 83	2	2	− 88	3	2
		Agw	− 89	—	—	− 97	—	—
100	120	Ang	− 72	2	2	− 66	3	2
		Agn	− 91	2	2	− 96	3	2
		Agw	− 97	—	—	− 105	—	—
120	140	Ang	− 85	2·5	2·5	− 77	4	2·5
		Agn	− 106	2·5	2·5	− 111	4	2·5
		Agw	− 113	—	—	− 121	—	—
140	160	Ang	− 93	2·5	2·5	− 85	4	2·5
		Agn	− 114	2·5	2·5	− 119	4	2·5
		Agw	− 121	—	—	− 129	—	—
160	180	Ang	− 101	2·5	2·5	− 93	4	2·5
		Agn	− 122	2·5	2·5	− 127	4	2·5
		Agw	− 129	—	—	− 137	—	—
180	200	Ang	− 115	3·5	3·5	− 108	5	3·5
		Agn	− 137	3·5	3·5	− 144	5	3·5
		Agw	− 144	—	—	− 154	—	—
200	225	Ang	− 123	3·5	3·5	− 116	5	3·5
		Agn	− 145	3·5	3·5	− 152	5	3·5
		Agw	− 152	—	—	− 162	—	—
225	250	Ang	− 133	3·5	3·5	− 126	5	3·5
		Agn	− 155	3·5	3·5	− 162	5	3·5
		Agw	− 162	—	—	− 172	—	—
250	280	Ang	− 152	4	4	− 142	6	4
		Agn	− 175	4	4	− 182	6	4
		Agw	− 183	—	—	− 193	—	—
280	315	Ang	− 164	4	4	− 154	6	4
		Agn	− 187	4	4	− 194	6	4
		Agw	− 195	—	—	− 205	—	—
315	355	Ang	− 183	4·5	4·5	− 175	6·5	4·5
		Agn	− 208	4·5	4·5	− 216	6·5	4·5
		Agw	− 217	—	—	− 228	—	—
355	400	Ang	− 201	4·5	4·5	− 193	6·5	4·5
		Agn	− 226	4·5	4·5	− 234	6·5	4·5
		Agw	− 235	—	—	− 246	—	—
400	450	Ang	− 224	5	5	− 216	7·5	5
		Agn	− 251	5	5	− 261	7·5	5
		Agw	− 261	—	—	− 274	—	—
450	500	Ang	− 244	5	5	− 236	7·5	5
		Agn	− 271	5	5	− 281	7·5	5
		Agw	− 281	—	—	− 294	—	—

(*Continued*)

TABLE 1 GAUGE ALLOWANCES AND MANUFACTURING TOLERANCES FOR INSIDE MEASUREMENTS — *Contd*

NOMINAL SIZE mm		GAUGE	TOLERANCE CLASS					
			T6			T7		
OVER	UP TO AND INCLUDING		A	$\pm \frac{H}{2}$	$\pm \frac{H_s}{2}$	A	$\pm \frac{H}{2}$	$\pm \frac{H_s}{2}$
—	3	Ang	—	—	—	—	—	—
		Agn	—	—	—	—	—	—
		Agw	—	—	—	—	—	—
3	6	Ang	—	—	—	—	—	—
		Agn	—	—	—	—	—	—
		Agw	—	—	—	—	—	—
6	10	Ang	—	—	—	—	—	—
		Agn	—	—	—	—	—	—
		Agw	—	—	—	—	—	—
10	18	Ang	—	—	—	—	—	—
		Agn	—	—	—	—	—	—
		Agw	—	—	—	—	—	—
18	24	Ang	—	—	—	—	—	—
		Agn	—	—	—	—	—	—
		Agw	—	—	—	—	—	—
24	30	Ang	−37	1·25	1·25	−33	2	1·25
		Agn	−48	1·25	1·25	−51	2	1·25
		Agw	−51·5	—	—	−57	—	—
30	40	Ang	−43	1·25	1·25	−39	2	1·25
		Agn	−56·5	1·25	1·25	−60·5	2	1·25
		Agw	−61	—	—	−67	—	—
40	50	Ang	−49	1·25	1·25	−45	2	1·25
		Agn	−62·5	1·25	1·25	−66·5	2	1·25
		Agw	−67	—	—	−73	—	—
50	65	Ang	−60	1·5	1·5	−55	2·5	1·5
		Agn	−76·5	1·5	1·5	−81	2·5	1·5
		Agw	−81	—	—	−88	—	—
65	80	Ang	−69	1·5	1·5	−64	2·5	1·5
		Agn	−85·5	1·5	1·5	−90	2·5	1·5
		Agw	−90	—	—	−97	—	—
80	100	Ang	−84	2	2	−78	3	2
		Agn	−103	2	2	−108	3	2
		Agw	−109	—	—	−117	—	—
100	120	Ang	−97	2	2	−91	3	2
		Agn	−116	2	2	−121	3	2
		Agw	−122	—	—	−130	—	—
120	140	Ang	−115	2·5	2·5	−107	4	2·5
		Agn	−136	2·5	2·5	−141	4	2·5
		Agw	−143	—	—	−151	—	—
140	160	Ang	−127	2·5	2·5	−119	4	2·5
		Agn	−148	2·5	2·5	−153	4	2·5
		Agw	−155	—	—	−163	—	—
160	180	Ang	−139	2·5	2·5	−131	4	2·5
		Agn	−160	2·5	2·5	−165	4	2·5
		Agw	−167	—	—	−175	—	—
180	200	Ang	−159	3·5	3·5	−152	5	3·5
		Agn	−181	3·5	3·5	−188	5	3·5
		Agw	−188	—	—	−198	—	—
200	225	Ang	−173	3·5	3·5	−166	5	3·5
		Agn	−195	3·5	3·5	−202	5	3·5
		Agw	−202	—	—	−212	—	—
225	250	Ang	−189	3·5	3·5	−182	5	3·5
		Agn	−211	3·5	3·5	−218	5	3·5
		Agw	−218	—	—	−228	—	—
250	280	Ang	−212	4	4	−202	6	4
		Agn	−235	4	4	−242	6	4
		Agw	−243	—	—	−253	—	—
280	315	Ang	−234	4	4	−224	6	4
		Agn	−257	4	4	−264	6	4
		Agw	−265	—	—	−275	—	—
315	355	Ang	−261	4·5	4·5	−253	6·5	4·5
		Agn	−286	4·5	4·5	−294	6·5	4·5
		Agw	−295	—	—	−308	—	—
355	400	Ang	−287	4·5	4·5	−279	6·5	4·5
		Agn	−312	4·5	4·5	−320	6·5	4·5
		Agw	−321	—	—	−332	—	—
400	450	Ang	−322	5	5	−314	7·5	5
		Agn	−349	5	5	−359	7·5	5
		Agw	−359	—	—	−372	—	—
450	500	Ang	−352	5	5	−344	7·5	5
		Agn	−379	5	5	−389	7·5	5
		Agw	−389	—	—	−402	—	—

EXPLANATORY NOTE

IS: 3455-1971 'Gauging practice for plain workpieces (*first revision*)' specifies the dimensions for different types of plug, ring and gap gauges. This standard gives in a tabulated form, the calculated values of the gauging allowances and manufacturing tolerances for cylindrical and flat plug gauges and spherical ended plug gauges of nominal sizes up to 500 mm for selected ISO tolerance zones as recommended in ISO/R 1829-1970 'Selection of tolerance zones for general purposes'. This standard supplements the details given in IS: 3455-1971. For individual gauges reference should be made to the following standards:

a) IS : 6137-1971 Gauging members for plain plug gauges 'GO member' (size range 1 to 30 mm)

b) IS : 6138-1971 Gauging members for plain plug gauges 'NO GO member' (size range 1 to 30 mm)

c) IS : 6244-1971 Gauging members for plain plug gauges 'GO' member (size range 30 to 100 mm)

d) IS : 6245-1971 Gauging members for plain plug gauges 'NO GO' member (size range 30 to 100 mm)

e) IS : 6246-1971 Gauging members for plain plug gauges 'GO' member (size range 100 to 250 mm)

f) IS : 6247-1971 Gauging members for plain plug gauges 'NO GO' member (size range 100 to 250 mm)

g) IS : 7018-1973 Technical supply conditions for gauges

In the preparation of this standard assistance has been derived from DIN 7164-1966 'Arbeitslehrdorne und Kugelendmasse fur ISO Passmasse von 1 bis 500 mm Nennmass Lehrenmasse und Herstelltoleranzen (Workshop plug gauges and spherical plug gauges for ISO-fit sizes from 1 up to 500 mm nominal size; deviations and tolerances for gauges)' issued by DIN Deutsches Institut fur Normung.

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